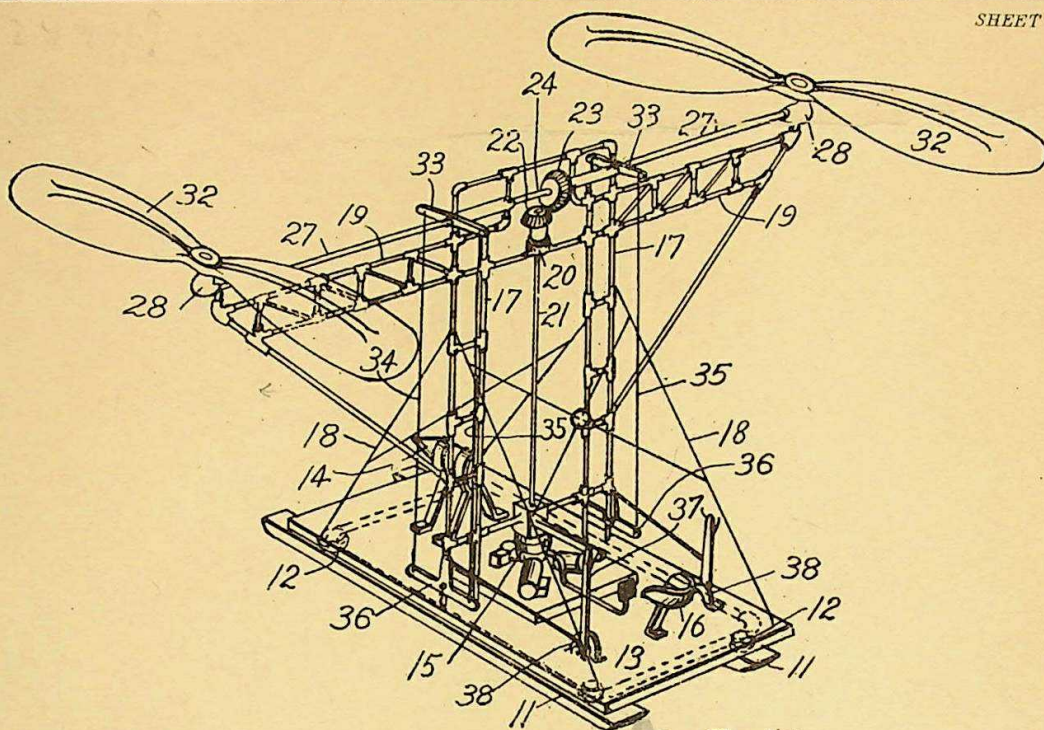


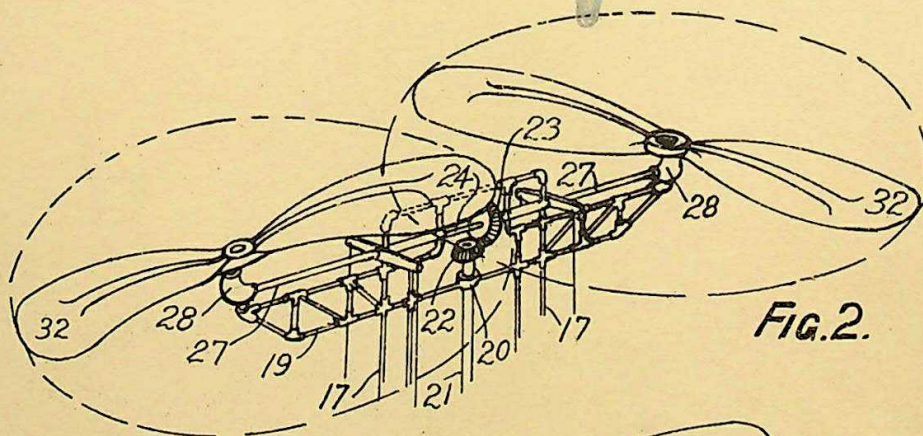
Thus, finding a way to produce or use vinyl on a reduced scale,

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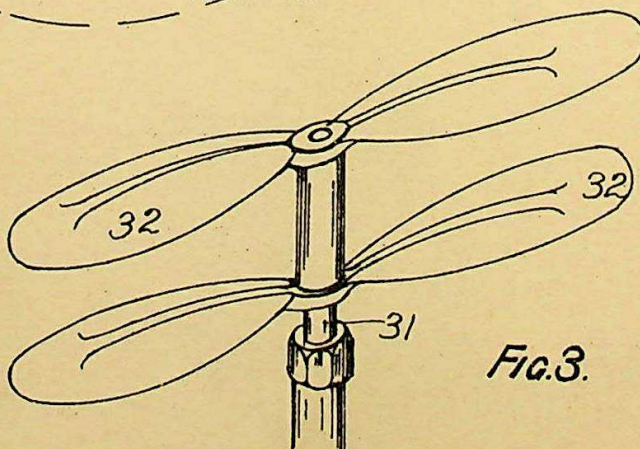
*SHEET 1*



**FIG. 1.**



*Fig. 2.*



*Fig. 3.*



(2 SHEETS)

SHEET 2.

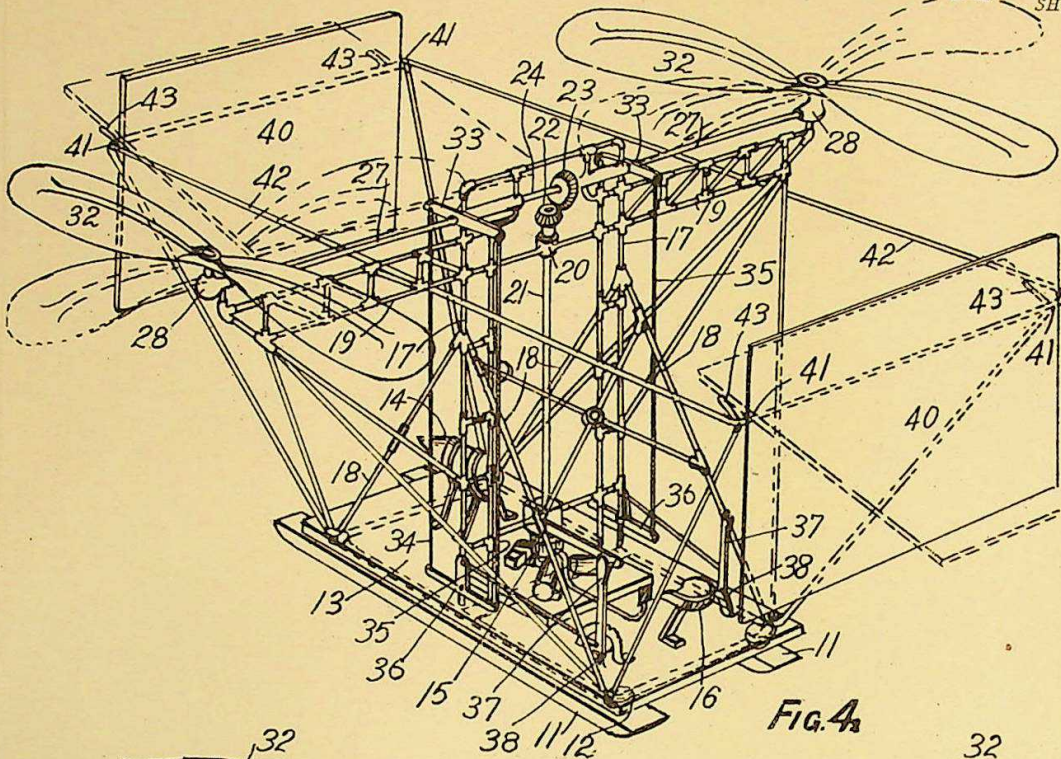


Fig. 4.

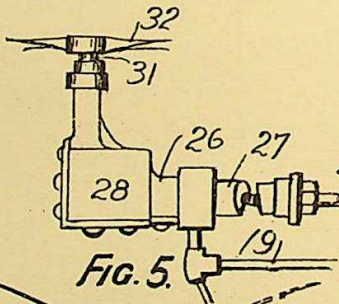


Fig. 5.

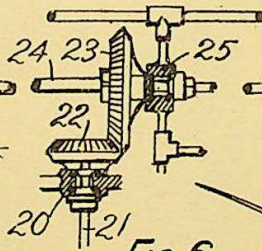


Fig. 6.

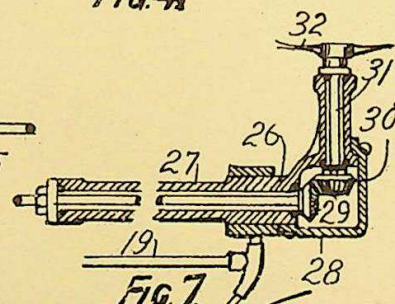


Fig. 7.

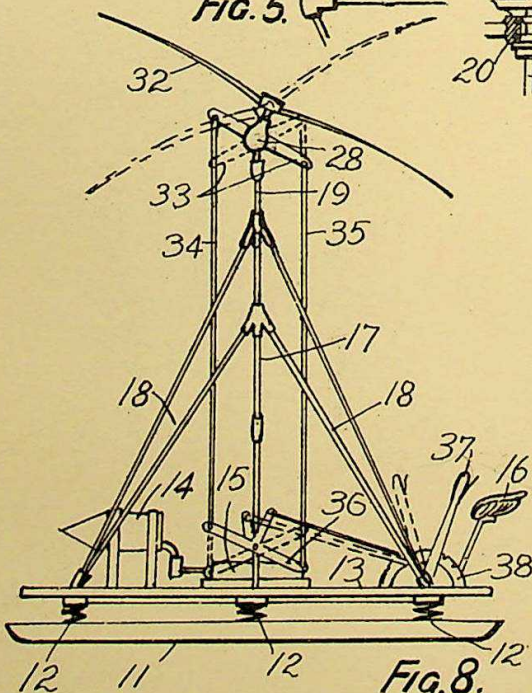


Fig. 8.

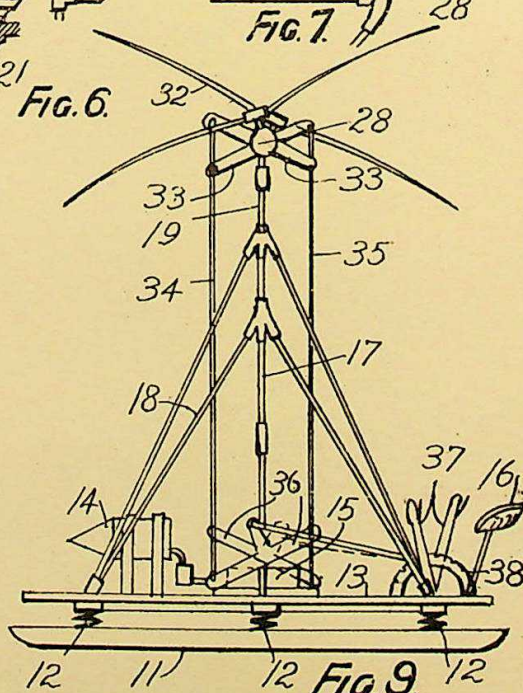


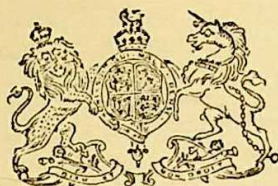
Fig. 9.



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NOTE.—The application for a Patent has become void, and the Specification is published in accordance with the provisions of the Patents and Designs Act, 1907. This print shows the Specification as it became open to public inspection.

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duplicate.

(Under International Convention.)

Date claimed under Patents and Designs Act, 1907, being date of first Foreign Application (in Australia), } 14th Oct., 1908

Date of Application (in the United Kingdom), 29th Sept., 1909

At the expiration of twelve months from the date of the first Foreign Application, the provision of Section 91 (3) (a) of the Patents and Designs Act, 1907, as to inspection of Specification, became operative

Complete Specification not accepted

#### COMPLETE SPECIFICATION.

##### Improved Flying Machine or Aeromobile.

I, CHARLES LAUNCELOT GARLAND, of No. 154, Phillip Street, Sydney, in the State of New South Wales and Commonwealth of Australia, Mining Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention refers to those flying machines which are heavier than air and relates to a simple and effectively controlled machine or aeromobile as it is termed by me.

10 An improved flying machine or aeromobile constructed according to this invention has on a higher plane than the platform or car a pair or a series of pairs of circular propellers and preferably fan or helical propellers each of which pair of such propellers is of reverse pitch to the other of said pair and is adapted to revolve in the opposite direction so that the side thrust of one on the air is balanced by that of the other. Each pair of propellers is revolved 15 by the one gear and gear shaft from the engine and each propeller is adapted to have its inclination relative to the horizon or the level of the earth adjusted independently of the inclination of the other propeller of said pair. When the propellers are set horizontally and set in operation a vertically rising motion is given to the whole machine and when the propellers are inclined fore and aft 20 a horizontal travel more or less inclined vertically is imparted to the machine while if the inclination of one propeller when but a pair is used (or of those propellers on one side when a series of pairs are used) is made greater than

[Price 8d.]



*Garland's Improved Flying Machine or Aeromobile.*

that (or those) of the corresponding propeller of the pairs then a curved or turning progress horizontally will result.

In carrying this invention into practice a light car or platform is constructed having preferably landing ~~butts~~ with springs or floats underneath and this platform supports ~~light~~ and appropriate engines or motors say petrol engines. On either side of the engine stayed uprights or verticals extend to a cross girder or beam of piping or light and strong framing also stayed to the car or platform. This cross beam carries in suitable bearings and within independent sleeves extending outwardly a horizontal driving shaft in gear by bevel toothed wheels or other driving mechanism with a central vertical shaft from the motor. At its outer ends the horizontal driving shaft similarly gears with the spindles of each of the pair of propellers. Each propeller has bearing in a right-angular off set of the enclosing sleeve of the horizontal shaft and each of these sleeves has arms or a cross lever from which cords or rods depend to close to the operator at the engine who is enabled thereby to control the inclination relative to the earth's level of each propeller independently of the other.

But in order to illustrate how this invention may be carried out in practice flying machines or aeromobiles constructed according thereto are illustrated in the drawings accompanying and forming part of this Complete Specification and will now be fully described with reference to said drawings.

Figure 1 is a perspective view of a simple construction of aeromobile having but one pair of propellers.

Figure 2 is a partial perspective of a modified arrangement of the propellers and

Figure 3 shows a modification or duplication of the propeller.

Figure 4 is a perspective view of a modified construction of aeromobile.

Figures 5, 6 and 7 show details of the propeller and driving shafts.

Figures 8 and 9 are side elevations of an aeromobile illustrating the operation of inclining the propellers.

A car or platform or deck 13 has springs 12 thereunder and buffers or floats 11 to facilitate landing and there might also be runners (not shewn) to facilitate movement over the ground. On this deck 13 is carried a petrol or other fuel container 14 an approved petrol or other fuel engine 15 and a seat 16 for the driving attendant. There might also be other accommodation (not shown) for a crew or passengers within limits.

To the framing of the deck 13 are affixed the vertical stanchions or frames 17 at either side with stays or guys 18 and these stanchions support a cross girder 19. Centrally between the stanchions 17 is the upper bearing 20 of the vertical shaft 21 to which the engine 15 is cranked or otherwise geared. Above this bearing 20 are the gear wheels 22 and 23 (the boxing in of which for the sake of clearness is not shewn) the latter being fast with or without a clutch gear to the horizontal driving shaft 24 running in bearings 25 and 26 and supporting in turn the sleeves 27 on whose outer ends are affixed the gear boxes 28 in which are gear-wheels 29 and 30 the latter on the end of short vertical shafts 31 whose protruding end carries the propeller 32 whose blades are constructed as aeroplanes with a helical set but having such set in reverse at opposite ends of the girder 19 and shaft 24. Each sleeve 27 has a cross bar or double ended lever 33 with depending cords or wires 34 and 35 fore and aft leading to rocking levers 36 corded or wired to the levers 37 in quadrant holds 38 whereby the attendant on the seat 16 may control the set of the gear boxes 28 and the propellers 32 to the horizon.

In operation the propellers 32 being set with their orbits of motion horizontal by means of levers 37 and their gearing on the engine 15 being started the whole aeromobile will rise vertically to the height desired. On the orbits of the propellers 32 being set at an inclination with the fore ends uppermost the aeromobile will then advance and rise and being set with the fore ends downwardly inclined the aeromobile will then advance and dip or sink. And on the engine



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being stopped while the aeromobile is in the air the whole machine will sink gradually being retarded by the inactive propellers.

Figure 2 shows the same construction as that described but in this case the propellers are brought the closer together and their orbits of motion overlap as shown.

Figure 3 shows a duplex propeller which might be used in every instance in substitution for a single propeller.

Figure 4 illustrates an aeromobile constructed upon the same principles as those described with reference to Figure 1 and whose functional parts bear the same reference figures but this construction carries in addition to the propellers 32 the fore and aft swinging aeroplanes 40 with the object of steadying the machine in its progress. Each plane 40 is pivoted or swung at 41 to the added framing 42 which carries stops 43 controlling the extent of motion of said planes. These swinging aeroplanes instead of being placed as illustrated fore and aft of the propellers might be swung on the sides in frames extended from the horizontal girder outwardly. In use the operations are similar to those described but the planes 40 adjusting themselves according to the resistance or wind in the air steady the progress of the aeromobile and at the same time they offer none or little resistance to rising and sinking.

In Figure 8 the left hand or port propeller is shown as deflected upwardly forward and the starboard propeller set oppositely and in Figure 9 both propellers are shown with a reverse inclination. In these extreme positions the aeromobile would likely revolve on its centre as an axis. But with one propeller set angularly and the other retained at the horizontal then a curve or turn in the horizontal direction would take place with the deflected propeller on the outer edge of said curve which would be of more or less circumference according to the angular set of the propeller.

For the sake of clearness and simplicity of description aeromobiles having only one pair of propellers have been illustrated and described though it is contemplated that a series of pairs of propellers might be used in which case no further description is needed than to say that the necessary series of parts of those referred to would be multiplied and be set parallel longitudinally.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. Improved flying machine or aeromobile whose essential feature is oppositely driven oppositely pitched helical propellers capable of being angularly set on opposite sides of an elevated frame from a car or platform carrying the operating mechanism substantially as herein described and explained.

2. Improved flying machine or aeromobile comprising a car or platform carrying operating and controlling mechanism and elevated from said car a pair or a series of pairs of oppositely driven oppositely pitched helical propellers capable of being angularly set substantially as herein described and explained.

3. Improved flying machine or aeromobile comprising the parts set forth in the preceding second claim and swinging aeroplanes substantially as herein described and explained.

4. In flying machines or aeromobiles of the class set forth the combination with a car or platform and an elevated framing of a cross shaft and sleeves on said cross shaft carrying gear boxes and bearings for propeller shafts and each sleeve adapted to be arbitrarily set in relation to said cross shaft substantially as herein described and explained.

5. The combination and arrangement together for the purposes set forth of the parts or integers constituting an improved aeromobile substantially as herein described and explained and as illustrated in Figures 1, 5, 6, 7, 8 and 9 of the drawings.

6. The combination and arrangement together for the purposes set forth of



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the parts or integers constituting an improved aeromobile substantially as herein described and explained and as illustrated in Figures 4, 5, 6, and 7 of the drawings.

Dated this Eleventh day of August One thousand nine hundred and nine.

CHARLES LAUNCELOT GARLAND. 5

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